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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DANIEL MARK COFFMAN, JAN KLEINDIENST,
and GANESH N. RAMASWAMY

Appeal 2009-005725
Application 10/701,784
Technology Center 2600

Before JOSEPH F. RUGGIERO, CARLA M. KRIVAK, and
BRADLEY W. BAUMEISTER, *Administrative Patent Judges*.

BAUMEISTER, *Administrative Patent Judge*.

DECISION ON APPEAL

SUMMARY

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1-29. Claims 1, 4, 10-12, 15, 21-23, and 26 stand rejected under 35 U.S.C. § 102(e) as anticipated by Ramaswamy (US 6,311,150 B1; issued Oct. 30, 2001). Claims 5 and 16 stand rejected under 35 U.S.C. § 103(a) as obvious over Ramaswamy. Claims 2, 3, 6, 13, 14, 17, 24, and 25 stand rejected under 35 U.S.C. § 103(a) as obvious over Ramaswamy in view of Amirghodsi (US 4,974,191; issued Nov. 27, 1990). Claims 7-9, 18-20, and 27-29 stand rejected under 35 U.S.C. § 103(a) as obvious over Ramaswamy in view of Ramaswamy, et al., "A Pervasive Conversational Interface for Information Interaction," Eurospeech 99, 1999 p 1-4.

We affirm.

STATEMENT OF THE CASE

Appellants describe their invention as follows:

A system and method for recognizing commands in natural language includes a speech recognizer for decoding language and semantic information in utterances provided by a user. A dialog manager provides a hierarchical ordering of handlers, each handler being trained to be responsive to decoded utterances. The dialog manager manages arbitration between the handlers to determine a winning handler for an utterance and decodes the command in accordance with the winning handler.

(Abstract).

To clarify possible confusion as to how a handler could be responsive to *decoded* utterances, when the handler, itself, decodes utterances, we note

that the Specification apparently uses the term “decode” to mean different actions. In a first context, an automatic speech recognizer decodes spoken utterances and routes the decoded utterances to a natural language processing facility (Spec. 4; Fig. 1). In a second context, the natural language processing facility decodes commands contained within the decoded utterance in accordance with the facility’s handlers (Spec. 5; Fig. 1).

Independent claim 1 is representative,¹ reading as follows:

1. A method for recognizing commands in natural language, comprising the steps of:

comparing an utterance to a plurality of handlers;²

identifying a winning handler for decoding a command from the utterance, wherein the winning handler is identified by arbitration between results provided by at least two of the plurality of handlers, and the results provided at a first stage by at least one of the at least two of the plurality of handlers include one or more target utterances³ for the utterance; and

¹ Although Appellants assert that “Claims 1, 12, and 23 represent separate features/implementations of the invention that are separately . . . patentable” (Reply Br. 6-7), Appellants argue claims 1, 4, 10-12, 15, 21-23, and 26 together as a single group. See Reply Br. 8-11; Reply Br. 11-19 (reproducing pages 9-19 of the Appeal Brief). We therefore select independent claim 1 as representative. See 37 C.F.R. § 41.37(c)(1)(vii).

² The meaning of “comparing an utterance to a plurality of handlers,” is not facially clear. In light of Appellants’ Specification (Spec. 11:10-15), we provisionally interpret this claim step to intend to read, “comparing features in an utterance to content stored in a plurality of handlers.”

³ Even though claim 1, as originally filed, sets forth the term “target utterances,” this term does not additionally appear in the written disclosure. The originally filed written disclosure instead recites that natural language systems include target *applications* (Spec. 2:13). The only other occurrence

decoding the command in accordance with the winning handler.

ARGUMENTS

I.

The Examiner interprets the claimed “winning handler” as reading on Ramaswamy’s “translator levels that output a category and corresponding formal command, as opposed to a do nothing command” (Ans. 15).

Appellants alternatively contend, “Ramaswamy discloses selecting a category (and not a winning handler as recited in [claim 1])” (Reply Br. 18). Appellants further contend that their Specification discloses, “a handler is a component of a dialog management system that interprets utterances, and not simply a category” (*id.*, citing Spec. 8:11-17).

II.

Appellants also challenge the Examiner’s conclusion that Ramaswamy discloses providing results at a first stage of handlers (Reply Br. 10). Specifically, Appellants contend that Ramaswamy is directed to a hierarchical system that “associates the selected category [from the first translation level] with a next level of translators and ultimately outputs the formal language command from a last level of translators”. (Reply Br. 18).

The Examiner does not contest Appellants’ interpretation of how Ramaswamy operates, but nonetheless maintains that Ramaswamy discloses this claim language. The Examiner takes the position that all of

of the term “target” is in the context of a “target of the utterance” (Spec. 8:14; *see also*, Spec. 11:11). We therefore provisionally interpret the claim limitation as intending to recite that the “results . . . include one or more target [applications for the] utterances.”

Ramaswamy's translation levels can be viewed together as constituting a single, or first, stage (Ans. 13).

Appellants respond by arguing that the terms "stage" and "level" are synonymous (Reply Br. 10). They submit definitions from general purpose dictionaries to support this position (*id.*).

III.

Appellants additionally challenge the Examiner's conclusion that Ramaswamy discloses a winning handler is identified by arbitration (Reply Br. 10). Appellants argue that simply applying a rule (such as where Ramaswamy selects the highest scoring category) does not constitute arbitration. But rather, arbitration requires a person or thing act as a judge to make a choice based on discretion (Reply Br. 16-18). To support the propriety of this proposed definition, Appellants point to the portions of their Specification that explain that the stages of arbitration may involve posing questions to the handlers (*id.*, citing Spec. 6, 12-14).

ISSUES

Appellants' contentions present the following issues:

- I. Does Ramaswamy disclose a "winning handler"?
- II. Is it reasonable to interpret "a first stage" as reading on multiple translation levels in combination?
- III. Can Ramaswamy's method of selecting models based upon the categories' respective scores constitute arbitration?

ANALYSIS

I.

We find that Ramaswamy does disclose a winning handler. We accept Appellants' assertions that a handler is a component that interprets utterances and that Ramaswamy discloses selecting a category (Reply Br. 18). However, we are not persuaded by Appellants' conclusory assertion that a handler cannot simply be a category (*id.*).

Ramaswamy describes a "category" as follows:

The step of translating the command into at least one category may include the step of providing a plurality of models. Each model is preferably associated with a category, and each category may include a subset of formal language commands to narrow a search space for determining the formal language command corresponding to the input command. The step of applying the formal language command to at least one application may be included. The at least one category may include formal language command entries relevant to at least one application and may further include the step of applying the formal language command entries to the at least one application in accordance with the input command. The at least one category may include all entries for the input command and may further include the step of associating a first portion of the entries with the at least one category by providing a formal command for each of the entries relevant for the at least one category.

(col. 1, l. 58 – col. 2, l. 8). Restated, Ramaswamy discloses that the categories interpret utterances, and we find no evidence or reasoning that would preclude a handler from reading on either (i) one or more of Ramaswamy's categories, or alternatively (ii) one or more of the models and/or translator levels that include these categories.

In further regard to the claim's requirement that the handler specifically be a winning handler, Appellants acknowledge the following:

Ramaswamy discloses that the category yielding the highest score is selected, the input command is associated with the selected category for a next level of translators, and the formal language command for the input command is outputted from a last of the translator levels based on the input command and the selected category.

(Reply Br. 18). We see no reason that would preclude the claimed winning handler from reading on the category of the last translator level stage that outputs the formal language command. Additionally, we see no reason that would preclude all of the selected categories of each translation level, together as a group, from being interpreted as a winning handler. Because we find that Ramaswamy discloses a handler that outputs a formal command, we need not address the further question of whether a handler can be deemed to be "winning" on the alternative basis of merely outputting an *intermediate* stage result (as opposed to outputting a do-nothing result).

II.

We find the Examiner's interpretation of "a first stage" as reading on multiple translation levels in combination to be reasonable. Appellants have provided evidence of one possible interpretation for the term "stage" (Reply Br. 10). However, they have not provided any evidence that this is either the only, or broadest reasonable, interpretation. Appellants' Specification does not provide any express definition of the term "stage." In fact, Appellants' originally filed Specification does not even set forth that handlers produce results at a first stage. The Specification alternatively indicates that a root handler 34 (a first-stage handler) delivers utterances to further handlers 32

and child handlers 30 (subsequent-stage handlers), which, in turn, produce results for arbitration (Spec. 11:19 – 12:17; Fig. 2). Accordingly, we find it reasonable to interpret the term “stage” to include a compound stage so as to read on a plurality of translation levels.

III.

Appellants’ argument that arbitration requires some additional element of discretion is unpersuasive. Even though Appellants’ method may entail posing queries to the handlers, this does not indicate any “discretion” on the part of the computer component that queries the handlers. The querying steps instead imply that the handlers follow some pre-programmed algorithm for responding to the query, and that the arbitration component follows some pre-programmed algorithm for processing the handlers’ responses and reaching an arbitration decision based upon these responses. Computer elements performing pre-programmed algorithms appear to be performing directed functions as opposed to discretionary ones. Accordingly, we find no persuasive evidence that would preclude arbitration from reading on Ramaswamy’s method of selecting models based upon the categories’ respective scores.

For the foregoing reasons, Appellants have not persuaded us of error in the Examiner’s anticipation rejection of representative claim 1. Accordingly, we will sustain the Examiner’s rejection of representative claim 1, as well as of claims 4, 10-12, 15, 21-23, and 26, which were not separately argued.⁴⁵

⁴ Claims 11 and 22, respectively depending from independent claims 1 and 12, each recites, “[a] computer-readable medium, tangibly embodying a program of instructions executable by a computer to perform [sic] method

With respect to the remaining rejections of claims 2, 3, 5-9, 13, 14, 16-20, 24, 25, and 27-29, Appellants provide no patentability arguments directed to the additional references of Amirghodsi or Ramaswamy II (App. Br. 19-20; Reply Br. 19-20). Appellants instead assert these claims' patentability based upon their dependency from independent claims 1, 12, and 23 (*id.*). Accordingly, we also sustain the rejections of claims 2, 3, 5-9, 13, 14, 16-20, 24, 25, and 27-29 for the reasons discussed above.⁶

step for recognizing commands in natural language as recited in claim 1 [or claim 12].” It is not reasonably clear whether these claims intend to recite “[a] method step” (in the singular) or alternatively, method steps (in the plural). Upon further prosecution, the Examiner should consider whether this ambiguity warrants a rejection under 35 U.S.C. § 112, ¶ 2 for indefiniteness. See *Ex parte Miyazaki*, 89 USPQ2d 1207, 1211 (BPAI 2008) (precedential), available at <http://www.uspto.gov/web/offices/dcom/bpai/prec/fd073300.pdf>. (noting that “if a claim is amenable to two or more plausible claim constructions, the USPTO is justified in requiring the applicant to more precisely define the metes and bounds of the claimed invention by holding the claim unpatentable under 35 U.S.C. § 112, second paragraph, as indefinite”).

⁵ Independent claim 23 is directed to “[a] system for recognizing commands in natural language, comprising: a speech recognizer . . . and a dialog manager comprising a hierarchical ordering of handlers” Appellants’ Specification indicates that speech recognizer and dialog manager may be implemented in software (Spec. 9:6-8). Upon further prosecution, the Examiner should consider whether claims 23-29 warrant a rejection under 35 U.S.C. § 101 for being directed to non-patentable subject matter. See 1351 Off. Gaz. Pat. Office 212 (Feb. 23, 2010); *Subject Matter Eligibility of Computer Readable Media*.

⁶ Subsequent to the initial filing date, claim 1 was amended to recite that a “winning handler is identified by arbitration between results provided by at least two of the plurality of handlers, and the results provided at a first stage by at least one . . . handler.” (See Amendment filed December 12, 2007). Independent claims 12 and 23 were also amended to recite similar language

CONCLUSIONS

Appellants have not shown that the Examiner erred in rejecting claims 1-29 under 35 U.S.C. §§102 and 103.

DECISION

The Examiner's decision rejecting claims 1-29 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2010).

AFFIRMED

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(*id.*). We do not see where the originally filed Specification discloses handlers that produce results *at a first stage*. For example, the Specification seems to alternatively indicate that a root handler 34 (a first-stage handler) delivers utterances to further handlers 32 and child handlers 30 (subsequent-stage handlers), which, in turn, produce results for arbitration (Spec. 11:19 – 12:17; Fig. 2). Upon further prosecution, the Examiner should consider whether these claim amendments warrant a rejection of claims 1-29 under 35 U.S.C. § 112, ¶ 1 for failing to be adequately supported by the originally filed Specification.